



the right energy.



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PRODUCT BROCHURE

2013 PAKISTAN

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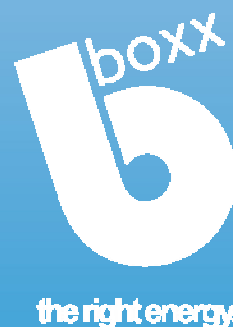
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ABOUT BBOXX

BBOXX is a global provider of integrated technology, consulting and transformation services dedicated solely to the electrification markets in developing countries. Our innovative products are designed to cater for a wide range of energy needs, from basic lighting to full AC electricity.

We aim to combine local knowledge, our history of successful electrification projects and our global research and logistical base to create a paradigm shift in electrification in the developing world.



BBOXX Solar Kit Systems



KEY PRODUCT FEATURES

- “Plug and Play Design”
- Robust Battery Box Casing
- Polycrystalline Solar Panels
- Sealed Lead Acid Batteries
- High Efficiency LED Lights
- Multiple USB Phone Charger
- Grid Charger

BB5

- 5Ah Battery
- 7W Solar Panel
- 1 x 2W LED Light
- DC & USB Outputs

BB12

- 12Ah Battery
- 30W Solar Panel
- 3 x 2W LED Lights
- DC & USB Outputs

BB17

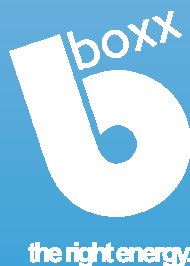
- 17Ah Battery
- 50W Solar Panel
- 2 x 2W and 1 x 6W LED Lights
- DC & USB Outputs

BB38

- 38Ah Battery
- 120W Solar Panel
- DC/AC/USB Outputs

BB120

- 120Ah Battery
- 180W Solar Panel
- DC/AC/USB Outputs



BBOXX BB5 Solar Kit



KEY PRODUCT FEATURES

- **BB5 Battery Box**
- **7W Solar Panel**
- **Grid Charger**
- **1 x LED Lamp**
- **USB Phone Charger**

Our entry-level, affordable 12V DC battery box is capable of powering DC appliances including LED lights, phones, low power TV's and radios

Detailed Product Specification

Control Unit: Continuous DC Output Power: 60W. Removable Fuse. Low/High Voltage, Thermal, Overload and Short-circuit Protection, Battery State of Charge Display, Two USB Outputs, Four 12V DC Outputs.

Solar Panel: 7W Flexible Polycrystalline Solar Panel with 10m cable and Integrated Connector

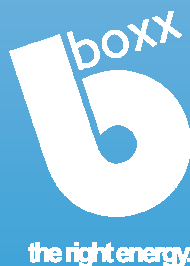
Battery: 5Ah, 12V Sealed Lead Acid, Maintenance Free Battery

LED Lights: One 2W LED Light with 8m cable and Integrated Connector

Other Accessories: USB Multiple Phone Charger, Two Spare Fuses, User Manual, Grid Charger

Weight: (2.6kg ex Accessories, 4kg Package Weight) **Dimensions:** (Control Box: 185mm x 85mm x 135mm)

See the next page for a breakdown of typical appliances that can be powered using the BB5 Solar Kit



With the BB5 you can use the following appliances everyday*:

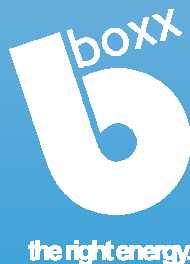
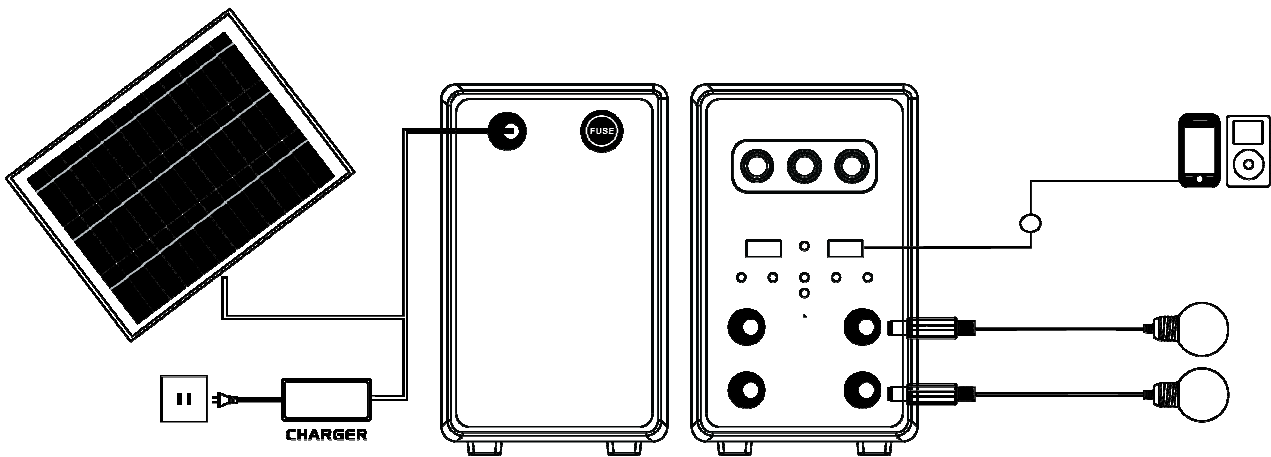


- Charge 2 phones
- Use 2x 2W led lights for 4 hours
- Watch 3 hours of the BBOXX 8" TV
- Use BBOXX fan for 2 hours



*Assuming a full sunny day and some hours of the grid electricity during the night

BB5 Solar Kit Wiring Diagram



BBOXX BB12 Solar Kit



KEY PRODUCT FEATURES

- BB12 Battery Box
- 30W Solar Panel
- Grid Charger
- 3 x LED Lamps
- USB Phone Charger

Our mid-range 12V DC battery box is capable of powering DC appliances including LED lights, phones, low power TV's and radios

Detailed Product Specification

Control Unit: Continuous DC Output Power: 100W, Removable Fuse. Low/High Voltage, Thermal, Overload and Short-circuit Protection, Battery State of Charge Display, Two USB Outputs, Four 12V DC Outputs.

Solar Panel: 30W Polycrystalline Solar Panel with 10m cable and Integrated Connector

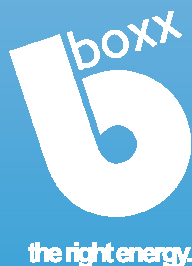
Battery: 12Ah, 12V Sealed Lead Acid, Maintenance Free Battery

LED Lights: Three 2W LED Lights with 8m cable and Integrated Connector

Other Accessories: USB Multiple Phone Charger, Two Spare Fuses, User Manual, Grid Charger

Weight: (5.4kg ex Accessories, 11.8kg Package Weight) **Dimensions:** (Control Box: 200mm x 108mm x 270mm)

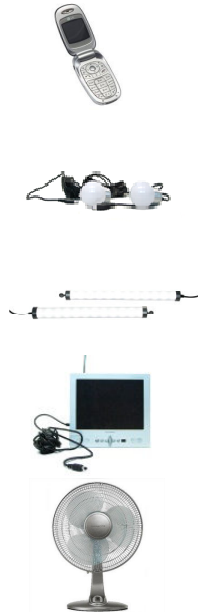
See the next page for a breakdown of typical appliances that can be powered using the BB12 Solar Kit



With the BB12 you can use everyday the following appliances*

Student use

- Charge 2 phones
- +
- Charge a laptop for 2 hours
- +
- Use a 6W LED tube for 2 hours
- +
- Watch 3 hours of BBOXX 8"TV
- +
- Use 5 hours of BBOXX DC fan



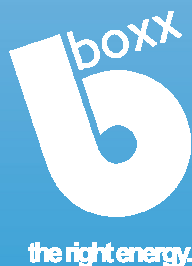
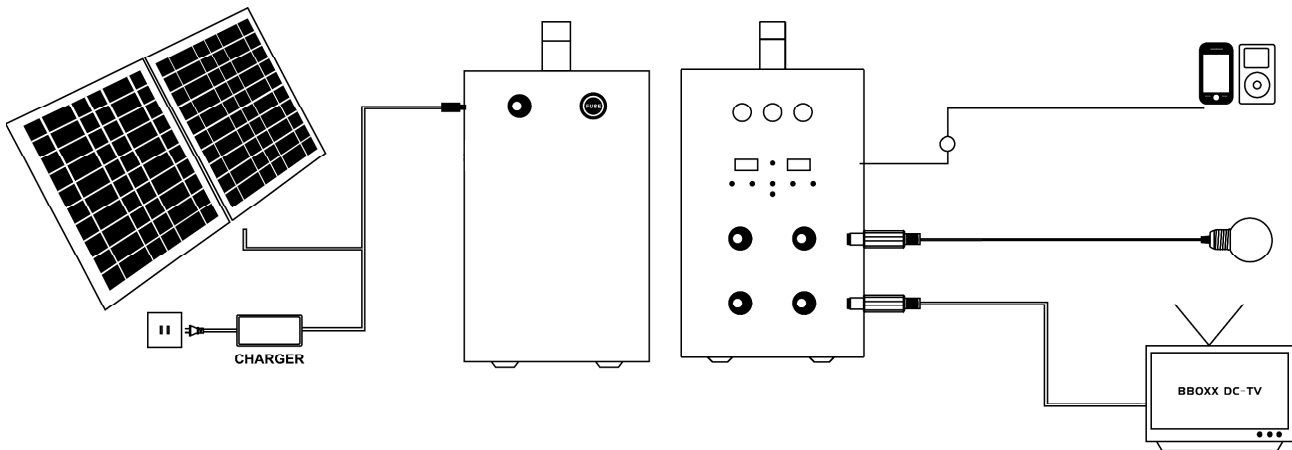
Barber shop

- Charge 3 phones
- +
- Use a 6W LED tube for 3 hours
- +
- Use a BBOXX Fan for 5 hours
- +
- Use 2 x shavers for 5 hours*



*Assuming a full sunny day and some hours of the grid electricity during the night

BB12 Solar Kit Wiring Diagram



BBOXX BB17 Solar Kit



KEY PRODUCT FEATURES

- **BB17 Battery Box**
- **50W Solar Panel**
- **Grid Charger**
- **3 x LED Lamps**
- **USB Phone Charger**

**Our mid-range 12V DC battery box is capable of powering DC appliances
It is also capable of powering AC devices (max 120W) using an external inverter**

Detailed Product Specification

Control Unit: Continuous DC Output Power: 100W, Inverter Connection and Removable Fuse. Low/High Voltage, Thermal, Overload and Short-circuit Protection, Battery State of Charge Display, Two USB Outputs, Four 12V DC Outputs.

Solar Panel: 50W Polycrystalline Solar Panel with 10m cable and Integrated Connector

Battery: 17Ah, 12V Sealed Lead Acid, Maintenance Free Battery

LED Lights: Two 2W LED Lights with 8m cable AND One 6W LED Tube Light with 8m cable and Integrated Connector

Other Accessories: USB Multiple Phone Charger, Two Spare Fuses, User Manual, Grid Charger

Weight: (7.02kg ex Accessories, 15kg Package Weight) **Dimensions:** (Control Box: 205mmx85mmx310mm)

See the next page for a breakdown of typical appliances that can be powered using the BB17 Solar Kit



With the BB17 you can use everyday the following appliances*:

Home use

- Charge 6 phones
- +
- Use a 6W LED tube during 4 hours
- +
- Watch 5 hours of BBOXX 8"TV
- +
- Use 3 hours of BBOXX Fan
- +
- Charge your laptop for 3.5 hours
- +
- Shave for 1 hours



Tailor shop

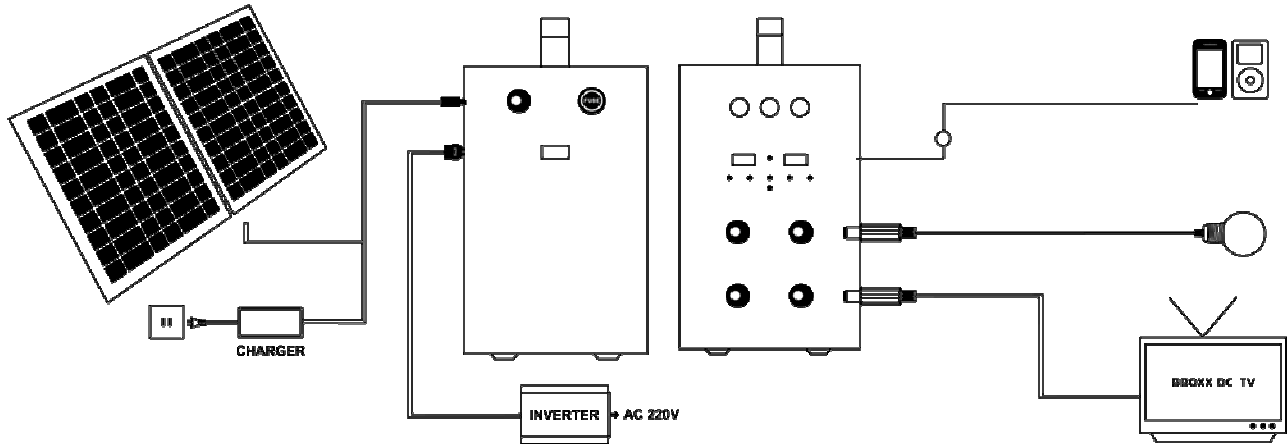
- Charge 4 phones
- +
- Use a 6W led tube during 4 hours
- +
- Use 3 x BBOXX Fan for 4 hours
- +
- Watch 4 hours of BBOXX 8" TV
- +
- Use a sewing machine for 6 hours**



*Assuming a full sunny day and some hours of the grid electricity during the night

**Assuming the sewing machine uses 20% of 120W motor per hour

BB17 Solar Kit Wiring Diagram



BBOXX BB38 Solar Kit

KEY PRODUCT FEATURES

- **BB38 Battery Box**
- **120W Solar Panel**
- **Grid & Laptop Charger**



**Our high capacity 12V DC battery box is capable of powering DC appliances
It also includes an inbuilt inverter to power AC devices up to 300W**

Detailed Product Specification

Control Unit: Continuous Output Power: 300W, Modified Sine Wave Inverter and Removable Fuse. Low/High Voltage, Thermal, Overload and Short-circuit Protection, Battery, AC and Solar Panel State of Charge Display, Two USB Outputs, Six 12V DC Outputs.

Solar Panel: 120W Polycrystalline Solar Panel with 10m cable and Integrated Connector

Battery: 38Ah, 12V Sealed Lead Acid, Maintenance Free Battery

Other Accessories: Two Spare Fuses, User Manual, Grid Charger

Weight: (16.9kg ex Accessories, 19.5kg ex Solar Panel) **Dimensions:** (Control Box: 300mmx180mmx345mm)

See the next page for a breakdown of typical appliances that can be powered using the BB38 Solar Kit



With the BB38 you can use everyday the following appliances*:

Home use

- Charge 10 phones
- +
- Use 3 x 10W energy efficient lights for 3 hours
- +
- Use a 100W ceiling fan for 5 hours
- +
- Charge a laptop for 1 hour
- +
- Watch BBOXX 15" TV for 4 hours

*Assuming a full sunny day and some hours of the grid electricity during the night

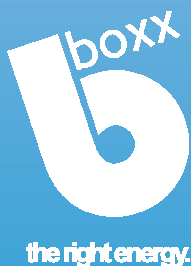
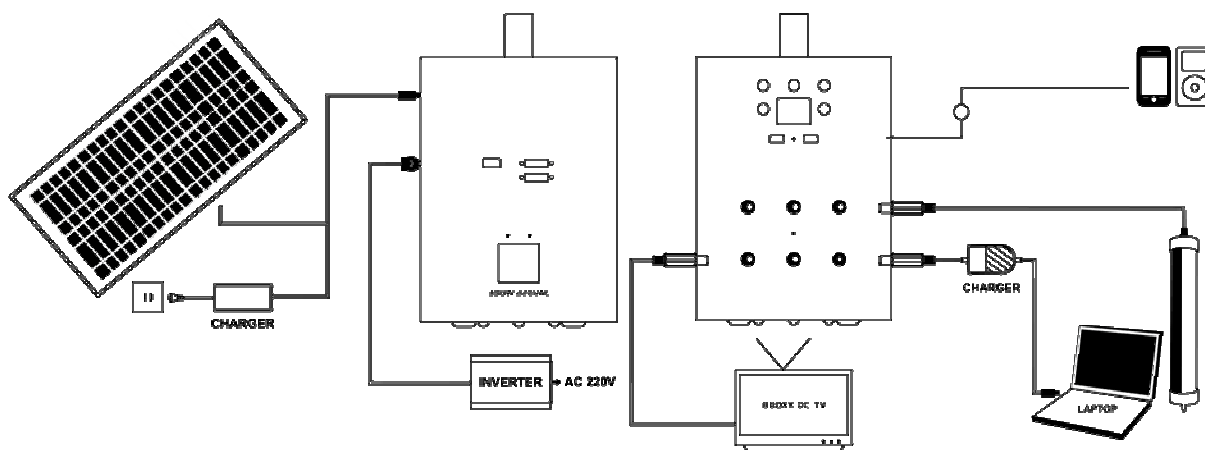
**Assuming the sewing machine uses 20% of 120W motor per hour



Tailor Shop

- Charge 3 phones
- +
- Use a 10W energy efficient light for 4 hours
- +
- Use a 100W ceiling fan for 4 hours
- +
- Use a 2x sewing machines for 6 hours**
- +
- Use 2x shavers for 3 hours
- +
- Watch BBOXX 8" TV for 3 hours

BB38 Solar Kit Wiring Diagram



BBOXX BB120 Solar Kit



KEY PRODUCT FEATURES

- **BB120 Battery Box**
- **180W Solar Panel**
- **Grid & Laptop Charger**

**Our top of the range 12V DC battery box is capable of powering DC appliances
It also includes an inbuilt inverter to power AC devices up to 600W**

Detailed Product Specification

Control Unit: Continuous Output Power: 600W, Modified Sine Wave Inverter and Removable Fuse. Low/High Voltage, Thermal, Overload and Short-circuit Protection, Battery, AC and Solar Panel State of Charge Display, Two USB Outputs, Four 12V DC Outputs.

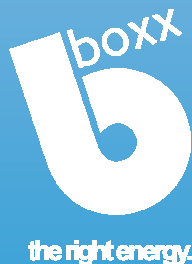
Solar Panel: 180W Polycrystalline Solar Panel with 10m cable and Integrated Connector

Battery: 120Ah, 12V Sealed Lead Acid, Maintenance Free Battery. External Battery Connector.

Other Accessories: Two Spare Fuses, User Manual, Grid Charger

Weight: (2.95kg Control Box Weight) **Dimensions:** (Control Box: 120mm x 105mm x 290mm)

See the next page for a breakdown of typical appliances that can be powered using the BB120 Solar Kit



With the BB120 you can use everyday the following appliances*:

Home use

- Charge 2 phones
- +
- Use 3x 10W energy efficient lights for 3 hours
- +
- Use a 2x 100W fan for 4 hours
- +
- Use a 100W fridge for 4 hours



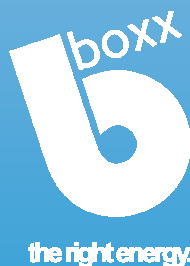
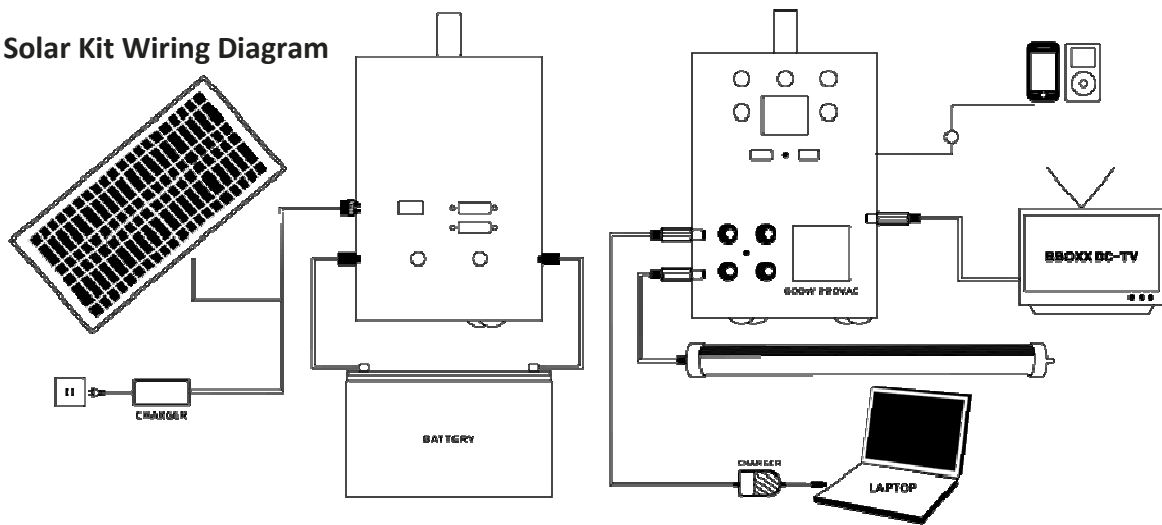
Tailor Shop

- Charge 3 phones
- +
- Use 2x shavers for 2 hours
- +
- Use 2x 100W ceiling fan for 4 hours
- +
- Use 3x 10W energy efficient lights for 3 hours
- +
- Use a 3x sewing machine for 5 hours**

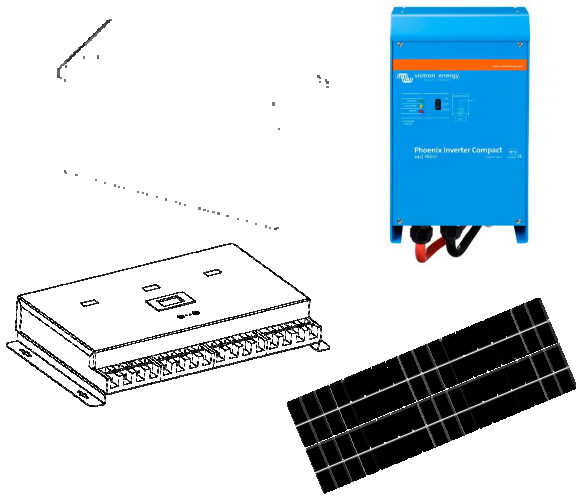
*Assuming a sunny day and some hours of the grid elec-

**Assuming the sewing machine uses 20% of 120W motor per hour

BB120 Solar Kit Wiring Diagram



BBOXX Off-Grid Solar Systems



KEY PRODUCT FEATURES

- BBOXX Developed Control Unit
- High Efficiency External Inverter
- Polycrystalline Solar Panels
- Sealed Lead Acid Batteries
- Solar Panel & Battery Mounting
- Solar Panel & Battery Wiring

BB400

- 500W of Solar Panels
- 400Ah SLA Batteries
- 1300W AC Output Power

BB800

- 1000W of Solar Panels
- 800Ah SLA Batteries
- 1300W AC Output Power

BB1200

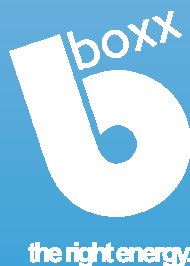
- 1500W of Solar Panels
- 1200Ah SLA Batteries
- 1300W AC Output Power

BB2400

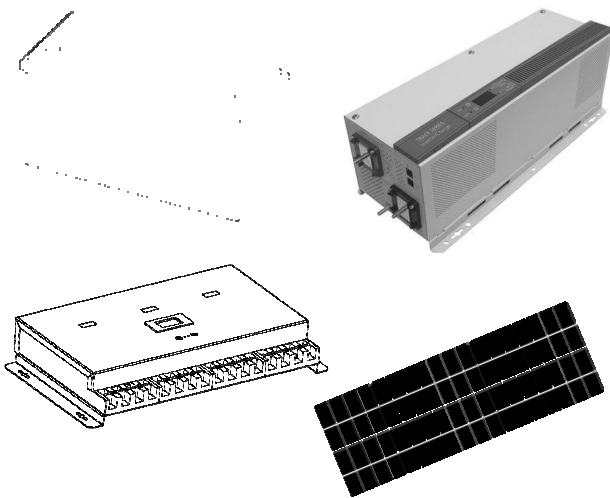
- 3000W of Solar Panels
- 2400Ah SLA Batteries
- 2500W AC Output Power

BB4000

- 5000W of Solar Panels
- 4000Ah SLA Batteries
- 2500W AC Output Power



BBOXX On-Grid Backup Systems



KEY PRODUCT FEATURES

- BBOXX Developed Control Unit
- Grid Tied Solar/Non-Solar Back-up Systems - Xantrex Controllers
- Polycrystalline Solar Panels
- Sealed Lead Acid Batteries
- Solar Panel & Battery Mounting

BB400 Solar Backup

- 250W of Solar Panels
- 400Ah SLA Batteries
- 2400W AC Output Power

BB800 Solar Backup

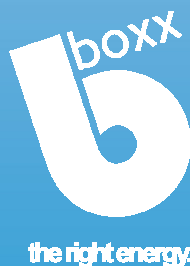
- 500W of Solar Panels
- 800Ah SLA Batteries
- 2400W AC Output Power

BB400 Backup

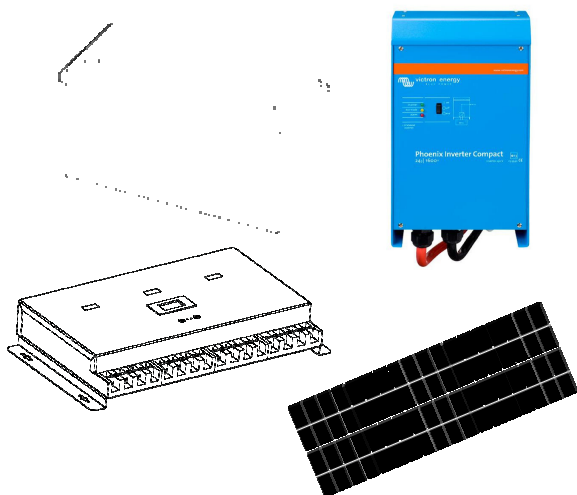
- 400Ah SLA Batteries
- 2400W AC Output Power
- Automatic Power Transfer Switch

BB800 Backup

- 800Ah SLA Batteries
- 2400W AC Output Power
- Automatic Power Transfer Switch



BB400 Off-Grid Solar System



KEY PRODUCT FEATURES

- Control Box & Charge Controller
- 500W of Solar Panels
- 400Ah of SLA Batteries
- 1300W Inverter Output Power
- Solar Panel & Battery Mounting
- Fusing, Protection & Wiring

Our entry level and affordable off-grid solar home system is capable of powering a wide range of AC electrical appliances in a typical small suburban home

Detailed Product Specifications

Inverter: Continuous Output Power: 1300W, Maximum Surge Output Power: 3000W, Pure Sine Wave 230V 50Hz Output, 94% Maximum Efficiency. Thermal, Overload, Short-circuit and Earth-fault Protection. Computer Interface.

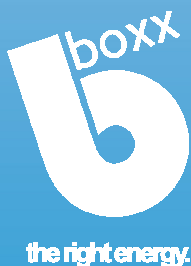
Solar Charge Controller and Connection Box: 20A Rating with PWM functionality. DC reverse polarity, low voltage and overcurrent protection. Integrated AC and DC fuses. DC outputs for low power lighting systems.

AC Input-Output: Connection to grid electricity supply and household wiring system.

Battery: 2 x 200Ah 12V Batteries with battery casing, fusing and wiring.

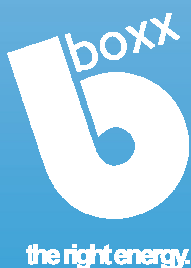
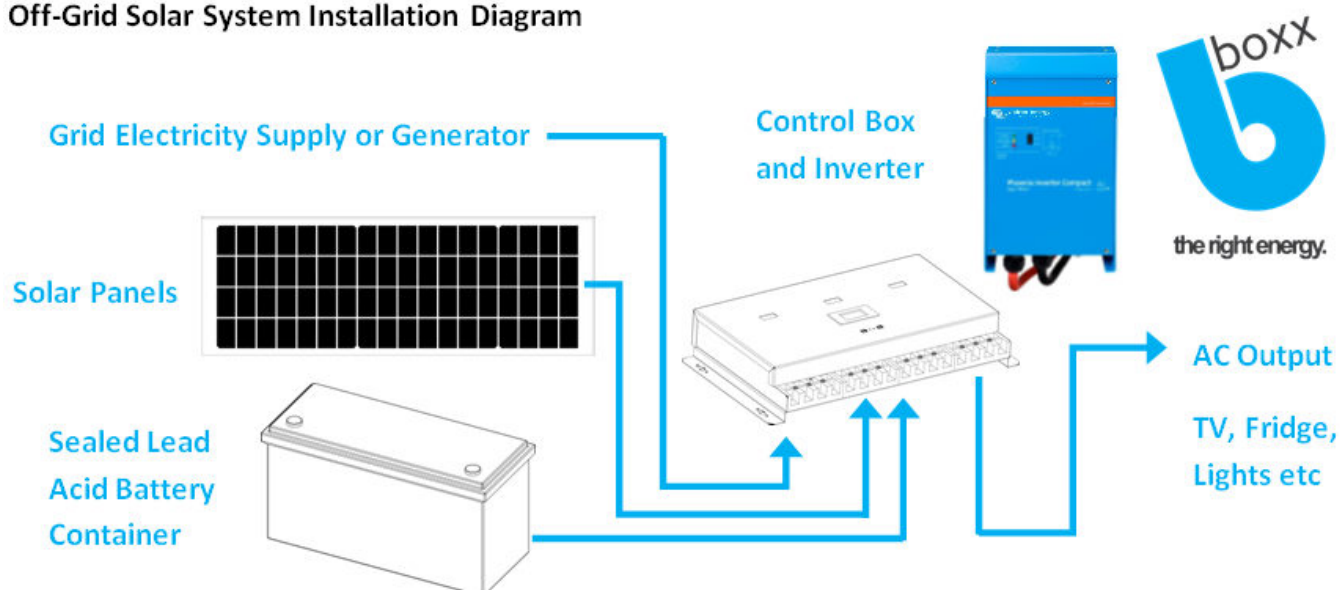
Solar Panels: 2 x 250W Polycrystalline Solar Panels with mounting and wiring.

See the next page for a breakdown of typical appliances that can be powered using the BB400 Off-Grid Solar System

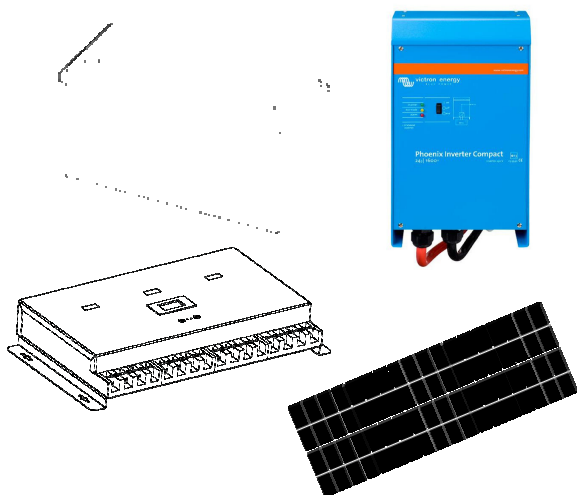


BB400 OFF GRID		Power
Solar Panel (w)		500
Daylight Hours (peak sunlight hours)		5.5
Power from Panel		2750
Battery Capacity (w)		4000
Battery capacity (W) **utilise 50% of battery		2000
Total Power (w) per day		4750
If battery used to completion in 1 day - Peak/Optimum Power		
Solar Panel (w)		500
Daylight Hours (peak sunlight hours)		5.5
Power from Panel		2750
Battery Capacity (w)		4000
Battery capacity (W) **utilise 80% of battery		3200
Total Power (w) per day		5950

Off-Grid Solar System Installation Diagram



BB800 Off-Grid Solar System



KEY PRODUCT FEATURES

- Control Box & Charge Controller
- 1000W of Solar Panels
- 800Ah of SLA Batteries
- 1300W Inverter Output Power
- Solar Panel & Battery Mounting
- Fusing, Protection & Wiring

Our entry level and affordable off-grid solar home system is capable of powering a wide range of AC electrical appliances in a typical small suburban home

Detailed Product Specifications

Inverter: Continuous Output Power: 1300W, Maximum Surge Output Power: 3000W, Pure Sine Wave 230V 50Hz Output, 94% Maximum Efficiency. Thermal, Overload, Short-circuit and Earth-fault Protection. Computer Interface.

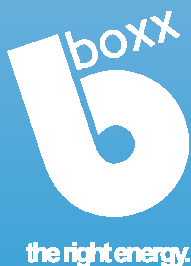
Solar Charge Controller and Connection Box: 30A Rating with PWM functionality. DC reverse polarity, low voltage and overcurrent protection. Integrated AC and DC fuses. DC outputs for low power lighting systems.

AC Input-Output: Connection to grid electricity supply and household wiring system.

Battery: 4 x 200Ah 12V Batteries with battery casing, fusing and wiring.

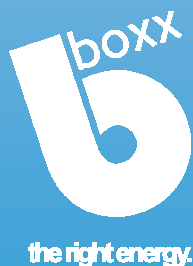
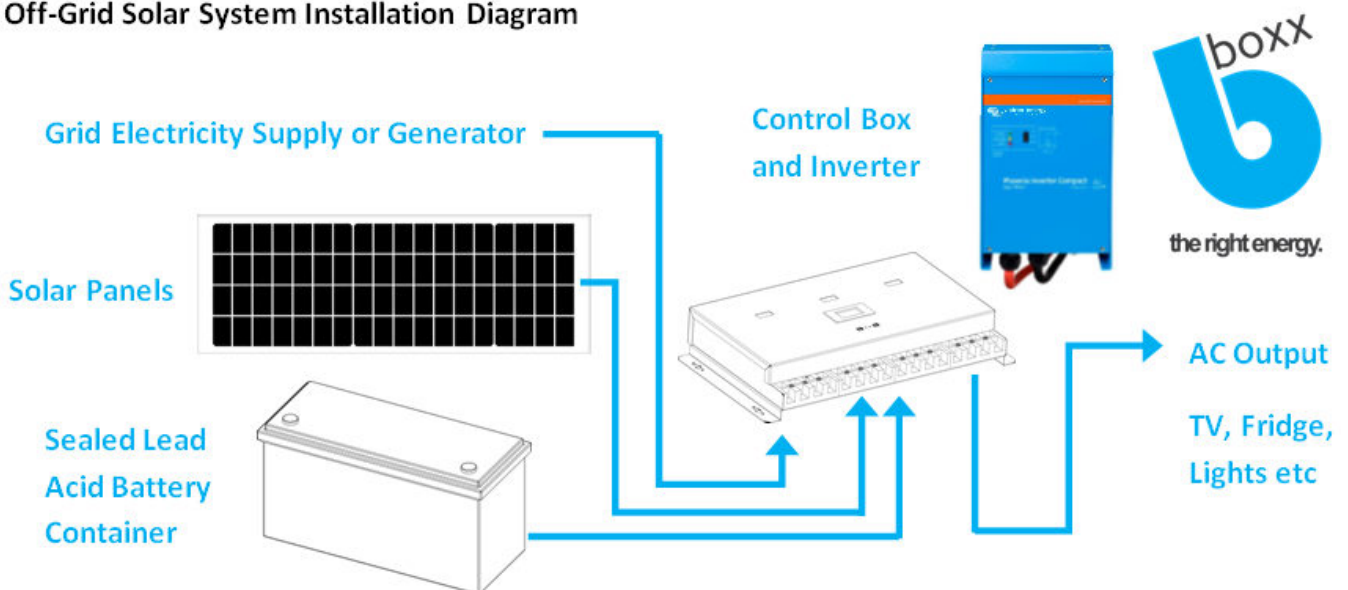
Solar Panels: 4 x 250W Polycrystalline Solar Panels with mounting and wiring.

See the next page for a breakdown of typical appliances that can be powered using the BB400 Off-Grid Solar System

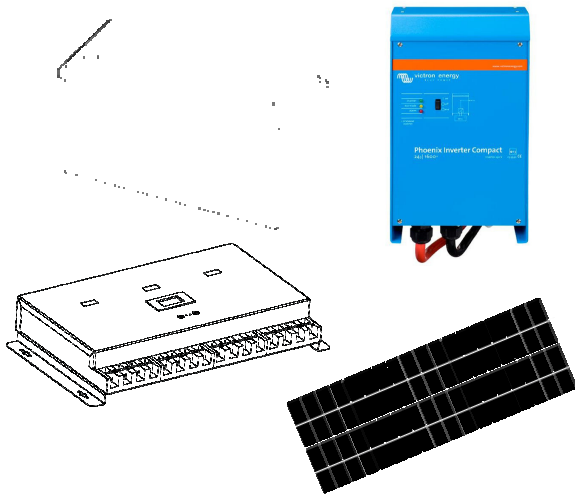


BB800 OFF GRID		Power
Solar Panel (w)		1000
Daylight Hours (peak sunlight hours)		5.5
Power from Panel		5500
Battery Capacity (w)		8000
Battery capacity (W) **utilise 50% of battery		4000
Total Power (w) per day		9500
If battery used to completion in 1 day - Peak/Optimum Power		
Solar Panel (w)		1000
Daylight Hours (peak sunlight hours)		5.5
Power from Panel		5500
Battery Capacity (w)		8000
Battery capacity (W) **utilise 80% of battery		6400
Total Power (w) per day		11900

Off-Grid Solar System Installation Diagram



BB1200 Off-Grid Solar System



KEY PRODUCT FEATURES

- Control Box & Charge Controller
- 1500W of Solar Panels
- 1200Ah of SLA Batteries
- 1300W Inverter Output Power
- Solar Panel & Battery Mounting
- Fusing, Protection & Wiring

Our medium sized and affordable off-grid solar home system is capable of powering a wide range of AC electrical appliances in a typical medium sized suburban home

Detailed Product Specifications

Inverter: Continuous Output Power: 1300W, Maximum Surge Output Power: 3000W, Pure Sine Wave 230V 50Hz Output, 94% Maximum Efficiency. Thermal, Overload, Short-circuit and Earth-fault Protection. Computer Interface.

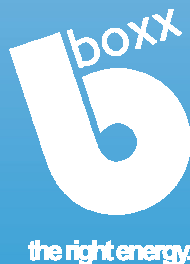
Solar Charge Controller and Connection Box: 2 x 30A Rating with PWM functionality. DC reverse polarity, low voltage and overcurrent protection. Integrated AC and DC fuses. DC outputs for low power lighting systems.

AC Input-Output: Connection to grid electricity supply and household wiring system.

Battery: 6 x 200Ah 12V Batteries with battery casing, fusing and wiring.

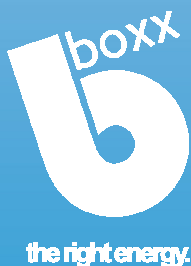
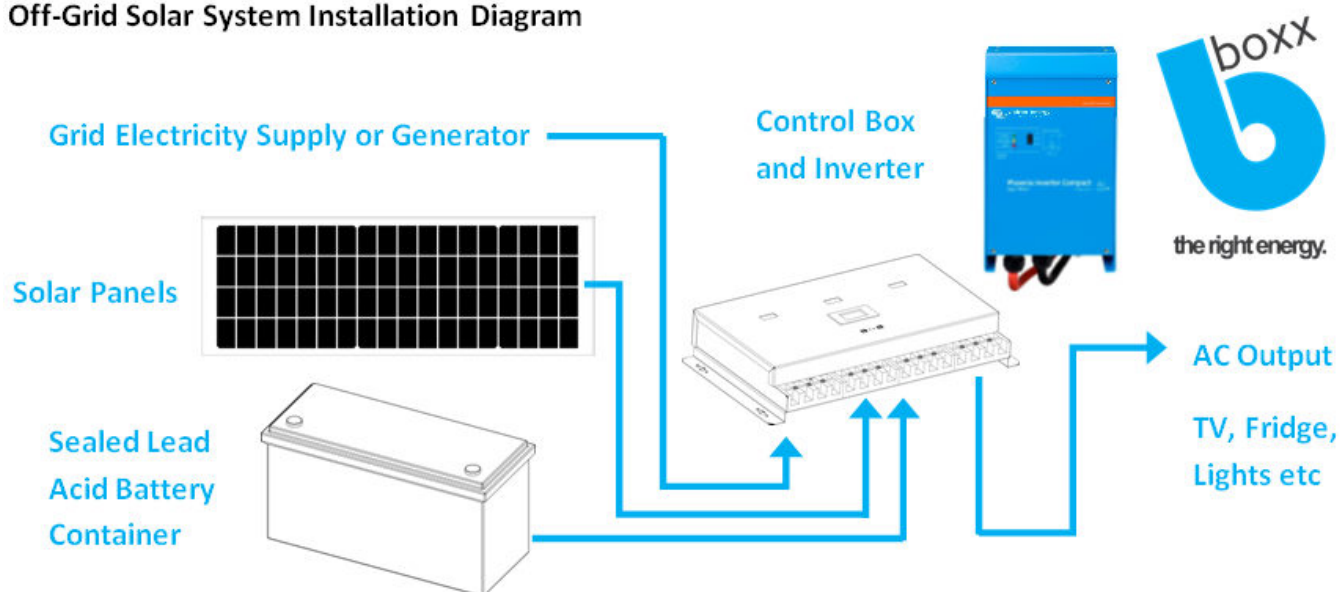
Solar Panels: 6 x 250W Polycrystalline Solar Panels with mounting and wiring.

See the next page for a breakdown of typical appliances that can be powered using the BB1200 Off-Grid Solar System

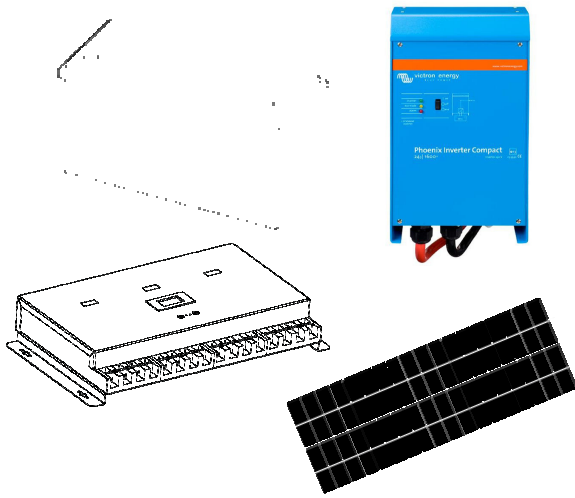


BB1200 OFF GRID		Power
Solar Panel (w)		1500
Daylight Hours (peak sunlight hours)		5.5
Power from Panel		8250
Battery Capacity (w)		12000
Battery capacity (W) **utilise 50% of battery		6000
Total Power (w) per day		14250
If battery used to completion in 1 day - Peak/Optimum Power		
Solar Panel (w)		1500
Daylight Hours (peak sunlight hours)		5.5
Power from Panel		8250
Battery Capacity (w)		12000
Battery capacity (W) **utilise 80% of battery		9600
Total Power (w) per day		17850

Off-Grid Solar System Installation Diagram



BB2400 Off-Grid Solar System



KEY PRODUCT FEATURES

- Control Box & Charge Controller
- 3000W of Solar Panels
- 2400Ah of SLA Batteries
- 2500W Inverter Output Power
- Solar Panel & Battery Mounting
- Fusing, Protection & Wiring

Our medium sized and affordable off-grid solar home system is capable of powering a wide range of AC electrical appliances in a typical medium sized suburban home

Detailed Product Specifications

Inverter: Continuous Output Power: 2500W, Maximum Surge Output Power: 6000W, Pure Sine Wave 230V 50Hz Output, 94% Maximum Efficiency. Thermal, Overload, Short-circuit and Earth-fault Protection. Computer Interface.

Solar Charge Controller and Connection Box: 4 x 30A Rating with PWM functionality. DC reverse polarity, low voltage and overcurrent protection. Integrated AC and DC fuses. DC outputs for low power lighting systems.

AC Input-Output: Connection to grid electricity supply and household wiring system.

Battery: 12 x 200Ah 12V Batteries with battery casing, fusing and wiring.

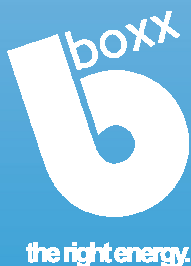
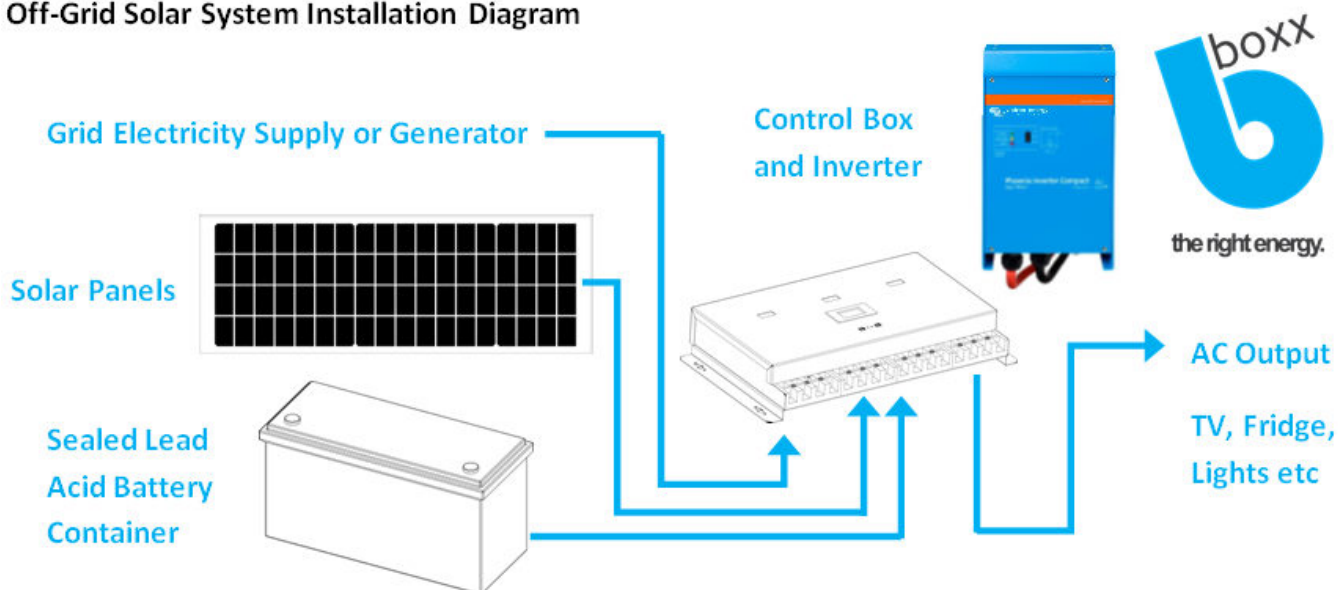
Solar Panels: 12 x 250W Polycrystalline Solar Panels with mounting and wiring.

See the next page for a breakdown of typical appliances that can be powered using the BB2400 Off-Grid Solar System

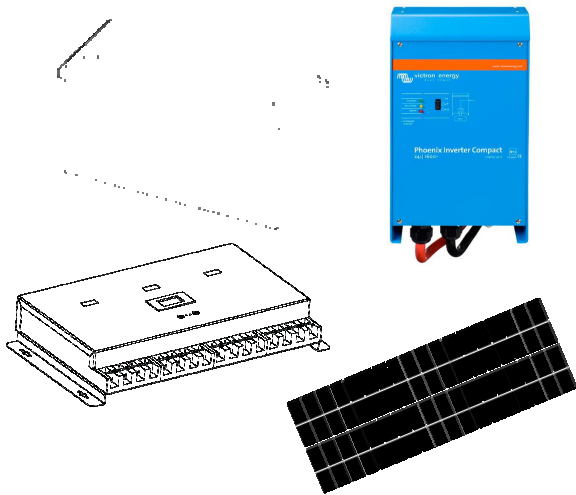


BB2400 OFF GRID		Power
Solar Panel (w)		3000
Daylight Hours (peak sunlight hours)		5.5
Power from Panel		16500
Battery Capacity (w)		24000
Battery capacity (W) **utilise 50% of battery		12000
Total Power (w) per day		28500
If battery used to completion in 1 day - Peak/Optimum Power		
Solar Panel (w)		3000
Daylight Hours (peak sunlight hours)		5.5
Power from Panel		16500
Battery Capacity (w)		24000
Battery capacity (W) **utilise 80% of battery		19200
Total Power (w) per day		35700

Off-Grid Solar System Installation Diagram



BB4000 Off-Grid Solar System



KEY PRODUCT FEATURES

- Control Box & Charge Controller
- 5000W of Solar Panels
- 4000Ah of SLA Batteries
- 2500W Inverter Output Power
- Solar Panel & Battery Mounting
- Fusing, Protection & Wiring

Our top of the range off-grid solar home system is capable of powering a wide range of high powered AC electrical appliances in a large suburban home or business

Detailed Product Specifications

Inverter: Continuous Output Power: 2500W, Maximum Surge Output Power: 6000W, Pure Sine Wave 230V 50Hz Output, 94% Maximum Efficiency. Thermal, Overload, Short-circuit and Earth-fault Protection. Computer Interface.

Solar Charge Controller and Connection Box: 4 x 45A Rating with PWM functionality. DC reverse polarity, low voltage and overcurrent protection. Integrated AC and DC fuses. DC outputs for low power lighting systems.

AC Input-Output: Connection to grid electricity supply and household wiring system.

Battery: 20 x 200Ah 12V Batteries with battery casing, fusing and wiring.

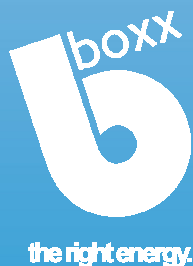
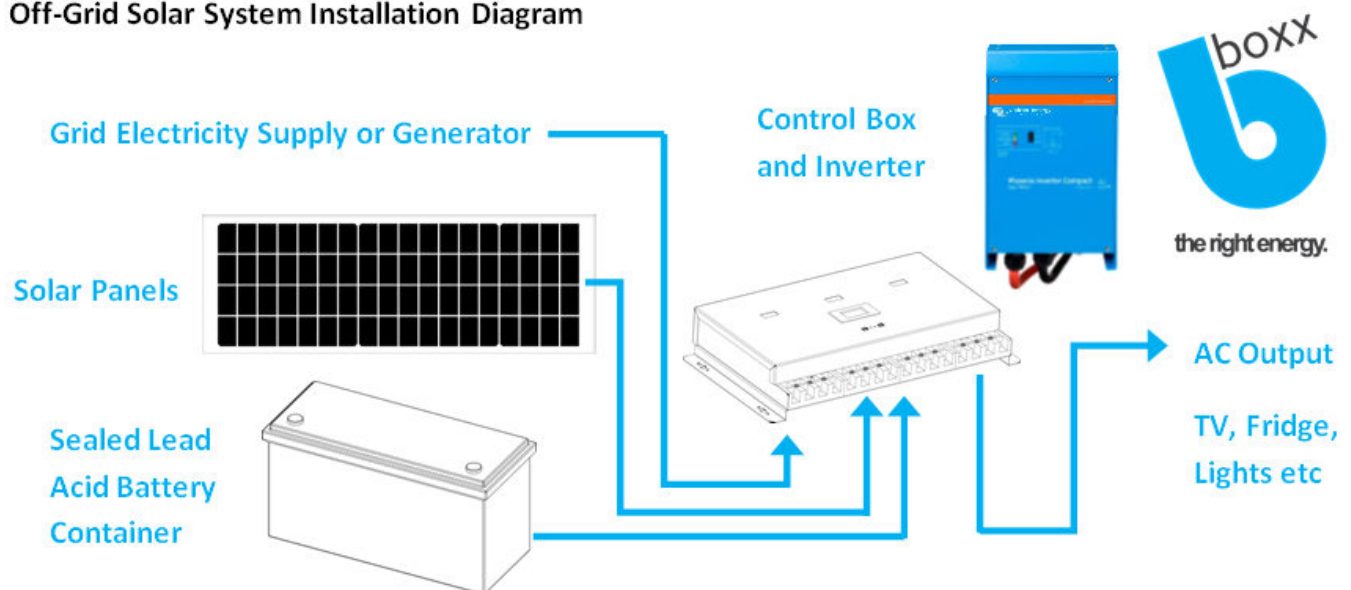
Solar Panels: 20 x 250W Polycrystalline Solar Panels with mounting and wiring.

See the next page for a breakdown of typical appliances that can be powered using the BB4000 Off-Grid Solar System

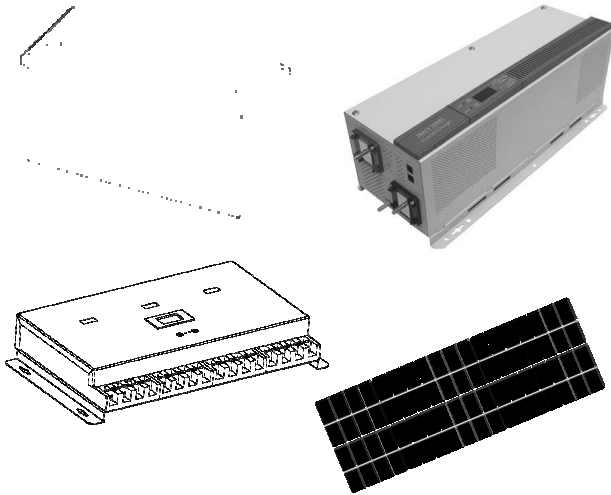


BB4000 OFF GRID		Power
Solar Panel (w)		5000
Daylight Hours (peak sunlight hours)		5.5
Power from Panel		27500
Battery Capacity (w)		40000
Battery capacity (W) **utilise 50% of battery		20000
Total Power (w) per day		47500
If battery used to completion in 1 day - Peak/Optimum Power		
Solar Panel (w)		5000
Daylight Hours (peak sunlight hours)		5.5
Power from Panel		27500
Battery Capacity (w)		40000
Battery capacity (W) **utilise 80% of battery		32000
Total Power (w) per day		59500

Off-Grid Solar System Installation Diagram



BB400 On-Grid Solar Backup



KEY PRODUCT FEATURES

- Xantrex TR2424E Inverter Charger
- 250W of Solar Panels
- 400Ah of SLA Batteries
- 2400W Output Power
- Control Box & Charge Controller
- Solar Panel & Battery Mounting

Our mid-range on-grid solar home backup system is capable of powering a wide range of AC electrical appliances in a home or business with a very unstable or unreliable grid connection.

Detailed Product Specifications

Xantrex TR2424E Inverter/Charger: Continuous Output Power: 2400W, Maximum Surge Output Power: 4800W, Pure Sine Wave 230V 50Hz Output, 92% Maximum Efficiency, 120-253VAC and 41-68Hz Voltage Input Range, Thermal, Overload, Short-circuit and Earth-fault Protection. Digital Display.

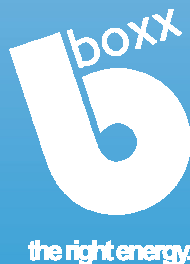
Solar Charge Controller and Connection Box: 20A Rating with PWM functionality. DC reverse polarity, low voltage and overcurrent protection. Integrated AC and DC fuses. DC outputs for low power lighting systems.

AC Input-Output: Connection to grid electricity supply with automatic (<40ms) transfer relay rated at 15A AC

Battery: 2 x 200Ah 12V Batteries with battery casing, fusing and wiring.

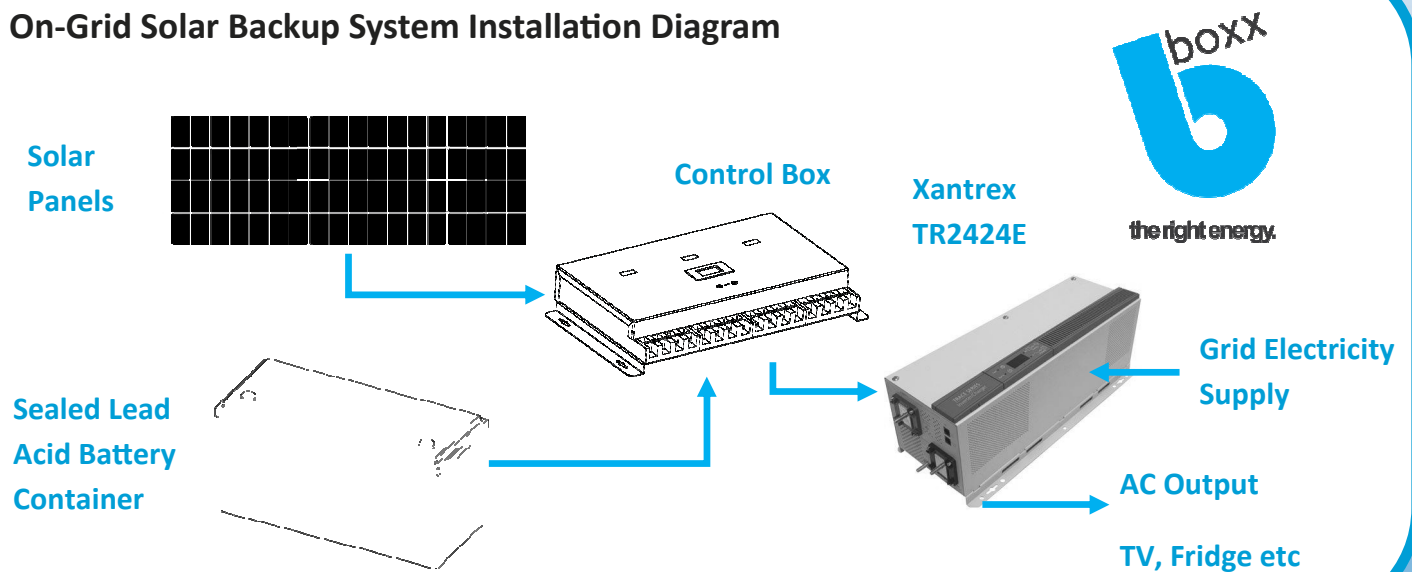
Solar Panels: 1 x 250W Polycrystalline Solar Panels with mounting and wiring.

See the next page for a breakdown of typical appliances that can be powered using the BB400 On-Grid Solar Backup

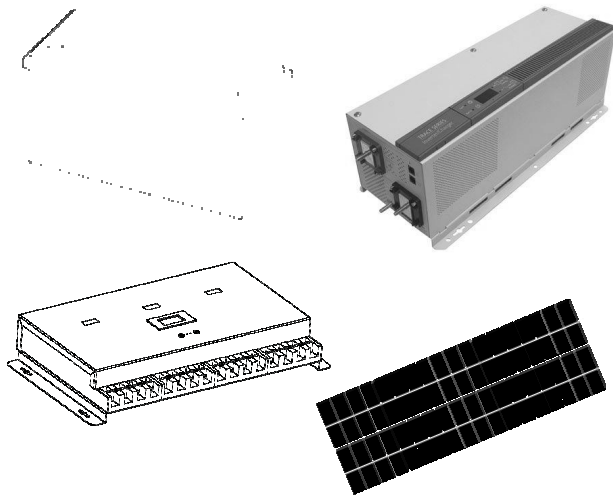


BB400 ON GRID		Power
Solar Panel (w)		250
Daylight Hours (peak sunlight hours)		5.5
Power from Panel		1375
Battery Capacity (w)		4000
Battery capacity (W) **utilise 50% of battery		2000
Total Power (w) per day		3375
If battery used to completion in 1 day - Peak/Optimum Power		
Solar Panel (w)		250
Daylight Hours (peak sunlight hours)		5.5
Power from Panel		1375
Battery Capacity (w)		4000
Battery capacity (W) **utilise 80% of battery		3200
Total Power (w) per day		4575

On-Grid Solar Backup System Installation Diagram



BB800 On-Grid Solar Backup



KEY PRODUCT FEATURES

- Xantrex TR2424E Inverter Charger
- 500W of Solar Panels
- 800Ah of SLA Batteries
- 2400W Output Power
- Control Box & Charge Controller
- Solar Panel & Battery Mounting

Our high end on-grid solar home backup system is capable of powering a wide range of AC electrical appliances in a home or business with a very unstable or unreliable grid connection.

Detailed Product Specifications

Xantrex TR2424E Inverter/Charger: Continuous Output Power: 2400W, Maximum Surge Output Power: 4800W, Pure Sine Wave 230V 50Hz Output, 92% Maximum Efficiency, 120-253VAC and 41-68Hz Voltage Input Range, Thermal, Overload, Short-circuit and Earth-fault Protection. Digital Display.

Solar Charge Controller and Connection Box: 30A Rating with PWM functionality. DC reverse polarity, low voltage and overcurrent protection. Integrated AC and DC fuses. DC outputs for low power lighting systems.

AC Input-Output: Connection to grid electricity supply with automatic (<40ms) transfer relay rated at 15A AC

Battery: 4 x 200Ah 12V Batteries with battery casing, fusing and wiring.

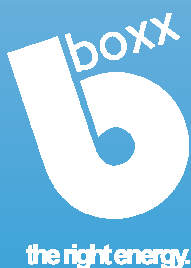
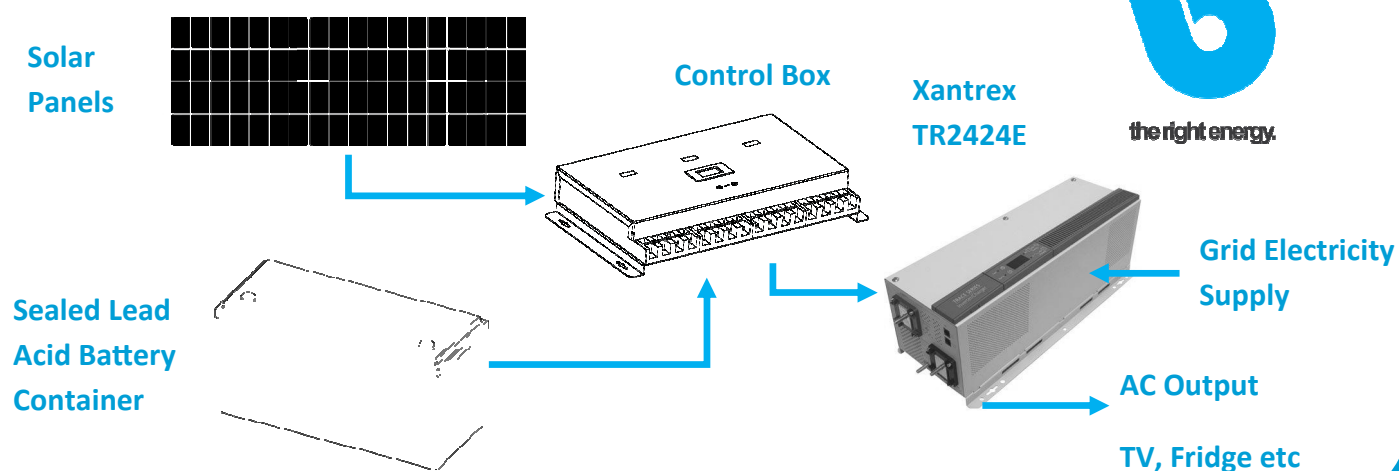
Solar Panels: 2 x 250W Polycrystalline Solar Panels with mounting and wiring.

See the next page for a breakdown of typical appliances that can be powered using the BB800 On-Grid Solar Backup

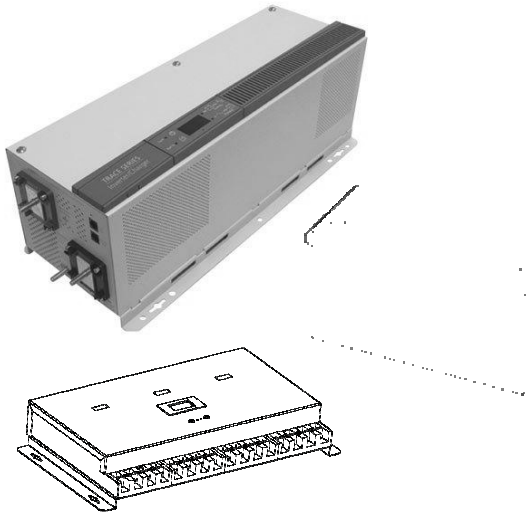


BB800 ON GRID		Power
Solar Panel (w)		500
Daylight Hours (peak sunlight hours)		5.5
Power from Panel		2750
Battery Capacity (w)		8000
Battery capacity (W) **utilise 50% of battery		4000
Total Power (w) per day		6750
If battery used to completion in 1 day - Peak/Optimum Power		
Solar Panel (w)		250
Daylight Hours (peak sunlight hours)		5.5
Power from Panel		1375
Battery Capacity (w)		8000
Battery capacity (W) **utilise 80% of battery		6400
Total Power (w) per day		7775

On-Grid Solar Backup System Installation Diagram



BB400 On-Grid Backup System



KEY PRODUCT FEATURES

- **Xantrex TR2424E Inverter Charger**
- **400Ah of SLA Batteries**
- **2400W Output Power**
- **Automatic Grid Transfer Switch**
- **Wiring, Fusing and Protection**
- **Control Box**

Our mid-range on-grid backup system is capable of powering a wide range of AC electrical appliances in a home or business with an unstable or unreliable grid connection.

Detailed Product Specifications

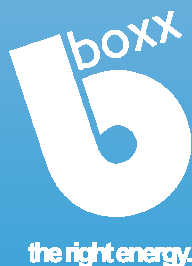
Xantrex TR2424E Inverter/Charger: Continuous Output Power: 2400W, Maximum Surge Output Power: 4800W, Pure Sine Wave 230V 50Hz Output, 92% Maximum Efficiency, 120-253VAC and 41-68Hz Voltage Input Range, Thermal, Overload, Short-circuit and Earth-fault Protection. Digital Display.

Connection Box: DC reverse polarity, low voltage and overcurrent protection. Integrated AC and DC fuses. DC outputs for low power lighting systems.

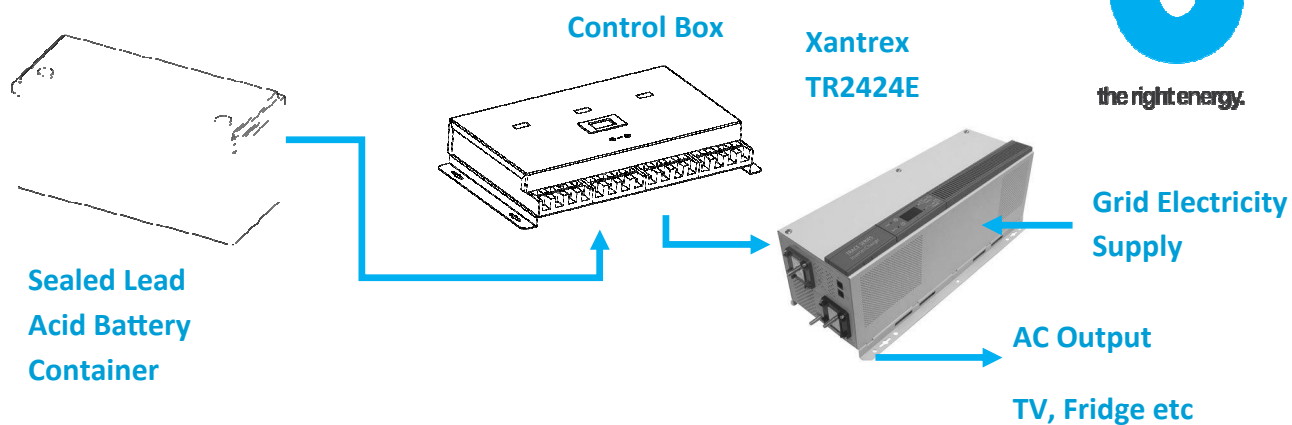
AC Input-Output: Connection to grid electricity supply with automatic (<40ms) transfer relay rated at 15A AC

Battery: 2 x 200Ah 12V Batteries with battery casing, fusing and wiring.

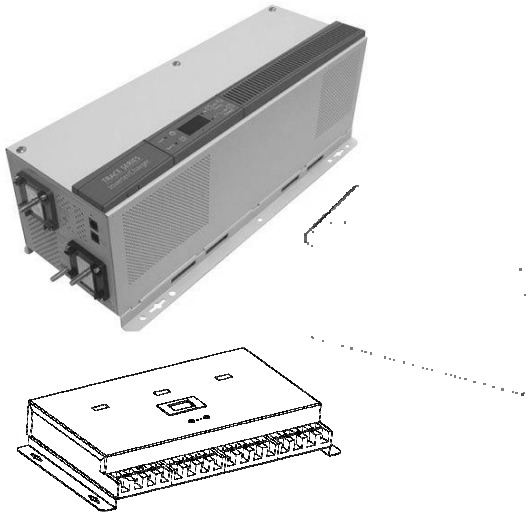
See the next page for a breakdown of typical appliances that can be powered using the BB400 On-Grid Backup



On-Grid Backup System Installation Diagram



BB800 On-Grid Backup System



KEY PRODUCT FEATURES

- **Xantrex TR2424E Inverter Charger**
- **800Ah of SLA Batteries**
- **2400W Output Power**
- **Automatic Grid Transfer Switch**
- **Wiring, Fusing and Protection**
- **Control Box**

Our high-end on-grid backup system is capable of powering a wide range of AC electrical appliances in a home or business with an unstable or unreliable grid connection.

Detailed Product Specifications

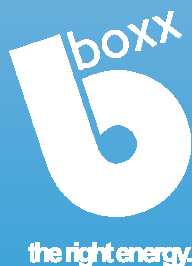
Xantrex TR2424E Inverter/Charger: Continuous Output Power: 2400W, Maximum Surge Output Power: 4800W, Pure Sine Wave 230V 50Hz Output, 92% Maximum Efficiency, 120-253VAC and 41-68Hz Voltage Input Range, Thermal, Overload, Short-circuit and Earth-fault Protection. Digital Display.

Connection Box: DC reverse polarity, low voltage and overcurrent protection. Integrated AC and DC fuses. DC outputs for low power lighting systems.

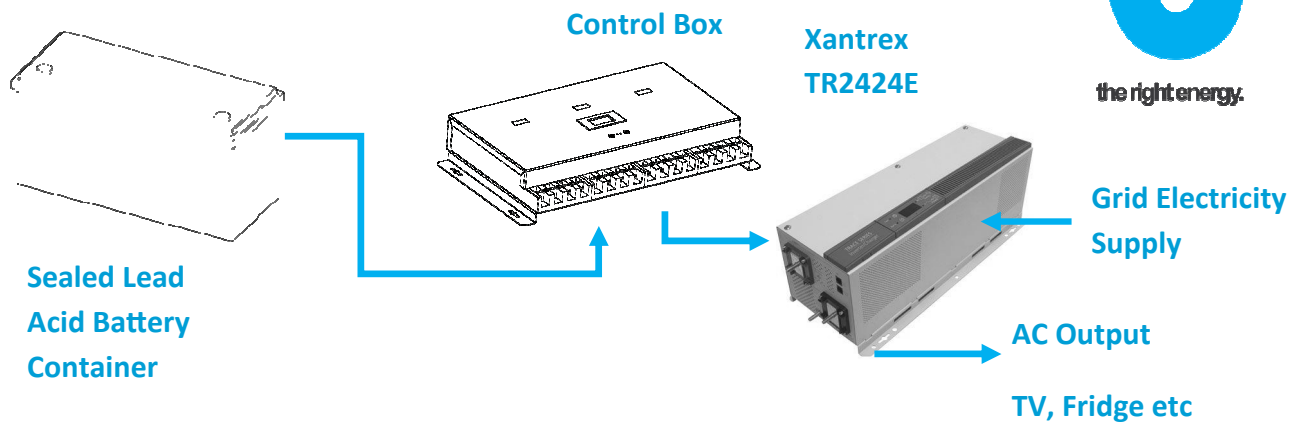
AC Input-Output: Connection to grid electricity supply with automatic (<40ms) transfer relay rated at 15A AC

Battery: 4 x 200Ah 12V Batteries with battery casing, fusing and wiring.

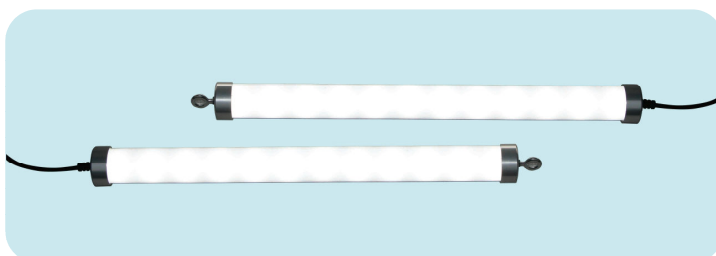
See the next page for a breakdown of typical appliances that can be powered using the BB800 On-Grid Backup



On-Grid Backup System Installation Diagram



BBOXX LED Lights



KEY PRODUCT FEATURES

- **Compatible with BBOXX Solar Kit Products**
- **Robust Casing**
- **8m Cable**
- **High Efficiency LED's**
- **Available in LED Tube or Bulb Varieties**

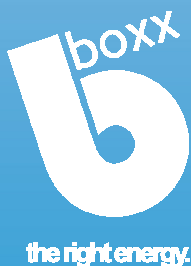
Power Ratings Available

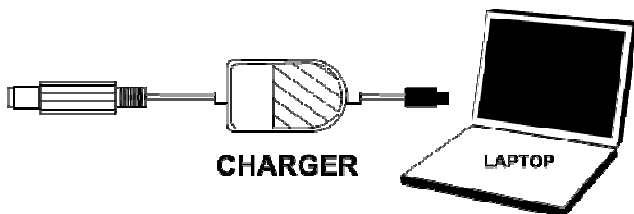
All products come with 8m cable and include temperature, voltage and current protection features.



Spotlight, Tube and other AC LED's (suitable for use with our on-grid systems) are also available.

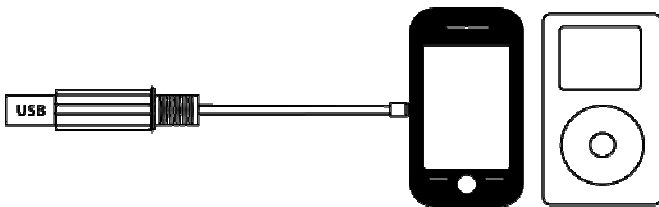
Contact: info@bboxx-pak.com for more details





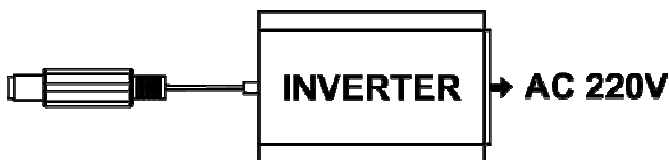
LAPTOP DC CHARGING KIT

- Multiple-Device Compatibility
- 15-24V Output Voltages
- 80W Max Power Output



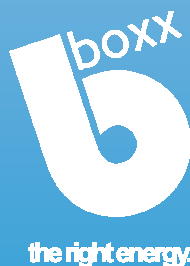
USB MULTIPLE PHONE CHARGER

- Multiple-Device Compatibility
- Inter-Changeable Tips
- Voltage Output: 5V DC



120W BBOXX SOLAR KIT INVERTER

- Compatible with the BB17 Solar Kit
- 120W Maximum Power Output
- Inbuilt Cooling Fan



BBOXX TV Systems



KEY PRODUCT FEATURES

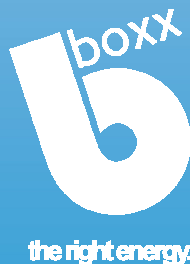
- **Compatible with BBOXX Solar Kits**
- **Low Power Consumption**
- **Multi-Language and Format Support**
- **Satellite and RF Antennas**

TV Technical Details:

- Screen Sizes: 8 inch, 15 inch & 22 inch
- Power Consumption from 5W (8 inch) to 45W (22 inch)
- 0-99 Analogue Channels
- NTSC and PAL Tuner Compatibility
- Supports External Aerial, VGA and Sound Connections
- For further details, contact: info@bboxx.co.uk

TV Accessory Products:

- Low Power 12V DC Digital and Satellite Decoders and DVD Player
- External High Gain Antenna

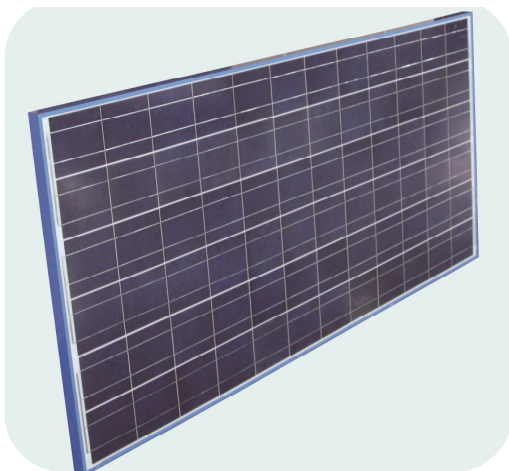


BBOXX Batteries & Solar Panels



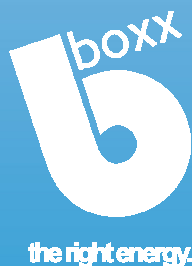
BBOXX SEALED LEAD ACID BATTERIES

- Battery Sizes from 5Ah to 500Ah
- 2V, 6V and 12V Types Available
- Maintenance Free AGM Type Battery
- Compatible with BBOXX Solar Kit and Home Installation Systems



BBOXX PHOTOVOLTAIC PANELS

- Power Ratings from 5W to 280W
- Mono or Poly Crystalline Types
- Anodized Aluminum Frames
- Full EU and Export Certifications
- High Quality Silicon Wafers



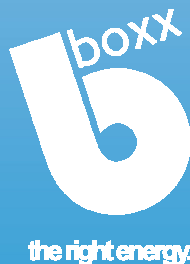
BBOXX Large PV Installations



KEY PRODUCT FEATURES

BBOXX is able to offer custom made, affordable solar systems to cater for intensive energy needs. We can design systems for both off-grid and on-grid use, in sizes from 500W to 5MW.

- Professionally designed and tailored to meet your energy needs
- High quality batteries, inverters and solar panels for business and household use
- Installation services and training of local operation
- Integrated with grid electricity or existing generators
- Prices vary depending on installation size
- For further information contact: info@bboxx-pak.com



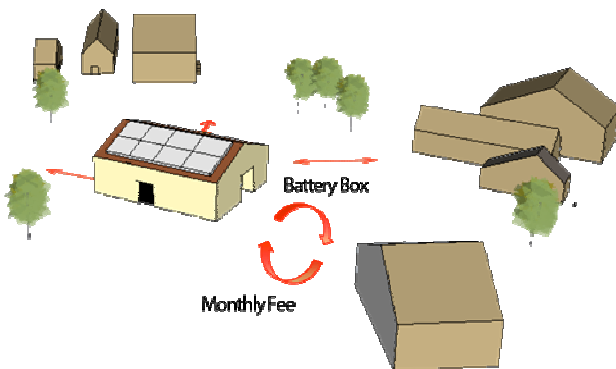
BBOXX Energy Kiosk Solution



KEY PRODUCT FEATURES

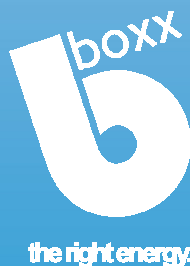
- Scalable & Affordable Rural Electrification Solution
- Attractive Financial Returns
- Central Power Generation
- BBOXX Battery Box Products & Accessories

1.6 billion people around the world do not have access to electricity. The Energy Kiosk concept designed by BBOXX's charitable arm, e.quinox, aims to resolve the issue of rural electrification in developing countries.

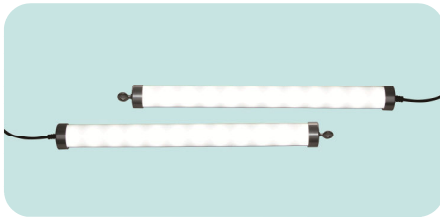


THE ENERGY KIOSK CONCEPT

- Central Power Generation through PV, Grid or Hydro
- Decentralized Distribution through BBOXX Battery Boxes



ENERGY KIOSK SET-UP PROCESS



- Uses BBOXX battery boxes & accessories
- Suitable for between 150 to 500 users
- Deposit paid by the user for insurance
- Recharge fees based on price of kerosene and existing energy services
- Maintenance, replacement of products & shopkeeper training paid for by kiosk revenue

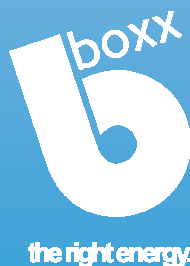
ESTIMATED FINANCIAL FORECASTS

Number of Energy Kiosk Users

	200	300	400	500
Estimated Investment Cost	\$ 55,093	\$ 83,838	\$ 109,335	\$ 135,201
<i>Investment Cost/household</i>	<i>\$ 275</i>	<i>\$ 279</i>	<i>\$ 273</i>	<i>\$ 270</i>
Estimated Average Annual Maintenance Cost	\$ 16,079	\$ 21,929	\$ 27,665	\$ 33,612
<i>Annual Maintenance Cost/household</i>	<i>\$ 80</i>	<i>\$ 73</i>	<i>\$ 69</i>	<i>\$ 67</i>
Estimated Annual Revenues	\$ 33,479	\$ 50,218	\$ 66,958	\$ 83,697
Estimated Annual Operating Gross Profit	\$ 19,074	\$ 30,800	\$ 42,640	\$ 54,269

NOTE: The financial estimations given in this document are provided as a guide to be used for project estimation purposes. The forecasts are based on the best available data gathered from e.quinox and BBOXX projects during 2008 to 2011 in rural Rwanda and Tanzania. BBOXX will not accept liability for financial decisions taken as a result of statements in this document without prior consultation with BBOXX and/or evaluation of the local economic conditions prevalent in the planned kiosk area.

The Energy Kiosk solution has been developed and tested by e.quinox. See www.e.quinox.org.uk for more details.



BBOXX Marketing Material

KEY PRODUCTS OFFERED

- BBOXX Product Flyers
- BBOXX Advertising Tent
- BBOXX Advertising Flag
- BBOXX Banner
- BBOXX Brochure
- BBOXX Polo Shirts



BBOXX is proud of its brand and the value it represents and will endeavour to support our partners around the world through effective marketing material. BBOXX aims to offer our partners the knowledge, the tools and expertise to successfully reach customers around the world.

